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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/980,275	05/16/2002	Masahiro Serizawa	P/ 126-213	3300

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EXAMINER	
WOZNIAK, JAMES S	

ART UNIT	PAPER NUMBER
2626	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/980,275	SERIZAWA ET AL.	
	Examiner	Art Unit	
	James S. Wozniak	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondenc address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 May 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-73* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-73* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *5/16/2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. **Claims 1, 4-5, 20-22, 24, 26-27, 34, 37-38, 49-51, 53, 55-57, 60-61, and 72-73** are rejected under 35 U.S.C. 102(e) as being anticipated by Johansson et al *(U.S. Patent: 6,275,798)*.

With respect to **Claims 1, 34, and 57**, Johansson discloses:

A decoding unit that decodes the speech signal in at least part of the voice less period by using a smoothed value obtained by smoothing the feature parameter representing spectral envelope characteristics *(decoder apparatus that determines a mixing factor to smooth spectral contour parameters for background noise silence periods, Col. 6, Lines 21-38; and Col. 3, Line 33- Col. 4, Line 65)*.

Johansson further discloses decoding method implementation using a digital signal processor (DSP) program, wherein the DSP would inherently require a memory medium for storing such a program *(Col. 7, Lines 1-5)*.

With respect to **Claims 4, 37, and 60**, Johansson discloses:

A voice-less part decoding unit that changes a value of a coefficient used to smooth at least one of the feature parameters according to the feature parameters, and decodes the speech signal in the voice-less period by smoothing at least one of the feature parameters with the changed value of the coefficient *(decoder apparatus that determines a mixing factor, which varies according to signal features, to smooth spectral contour parameters for background noise silence periods, Col. 6, Lines 21-38; and Col. 3, Line 33- Col. 4, Line 65)*.

Johansson further discloses decoding method implementation using a digital signal processor (DSP) program, wherein the DSP would inherently require a memory medium for storing such a program *(Col. 7, Lines 1-5)*.

With respect to **Claims 5, 38, and 61**, Johansson discloses:

The voice-less part decoding unit decodes the speech signal by using at least one of the received feature parameters as it is while a feature parameter satisfies a predetermined condition, and decodes the speech signal by using at least one smoothed feature parameter selected from the feature parameters after the condition is not satisfied *(no energy contour smoothing for determined voiced speech and full energy contour smoothing for determined stationary background noise, Col. 3, Line 36-65)*.

With respect to **Claims 20-21, 49-50, and 72-73**, Johansson discloses:

A voice-less part decoding unit which generates signals in the voice-less period by feeding an excitation signal composed of plural types of signals to a synthesis filter in the voice-less period, wherein the voice-less part decoding unit comprises a weighting coefficient determining unit which determines a weighting coefficient used in a weighted sum operation of the plurality of types of signals in the voice-less period according to at least one smoothed

feature parameter obtained by smoothing a feature parameter selected from the received feature parameters in a time direction, and the excitation signal generated by using the weighting coefficient is fed to the synthesis filter *(decoding voiced and non-voice data by processing synthesis filter (excitation) coefficients and combining weighted non-voice coefficients with voice and LSF parameters in a speech reconstruction filter, Col. 3, Line 4- Col. 4, Line 65; and Col. 6, Lines 9-38)*.

Johansson further discloses decoding method implementation using a digital signal processor (DSP) program, wherein the DSP would inherently require a memory medium for storing such a program *(Col. 7, Lines 1-5)*.

With respect to **Claims 22, 24, 26-27, 51, 53 and 55-56**, Johansson further teaches energy parameters indicative of a spectral contour (envelope) *(Col. 3, Line 33- Col. 4, Line 65)*.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. **Claims 2-3, 7-10, 23, 28-30, 32-33, 35-36, 40-43, 52, 58-59, and 63-66** are rejected under 35 U.S.C. 103(a) as being unpatentable over Johansson in view of Takahashi *(U.S. Patent: 6,272,459)*.

With respect to **Claims 2, 35, and 58**, Johansson discloses the spectral contour smoothing decoder for background noise, wherein a mixing (smoothing) factor is changed based on whether speech or noise data is identified, as applied to Claim 5. Johansson further discloses decoding method implementation using a digital signal processor (DSP) program, wherein the DSP would inherently require a memory medium for storing such a program *(Col. 7, Lines 1-5)*. Johansson does not specifically suggest changing a smoothing coefficient based on an elapsed time from a voice/non-voice transition point, however Takahashi recites a means for counting a number of time frames *(20ms time frame, Col. 5, lines 11-16)* from a transition or hangover between voice and non-voice data in order to determine the application of a smoothing parameter *(counting time frames which would provide an indication of elapsed time, Col. 10, Lines 11-29; Col. 9, Lines 4-38; and Abstract)*.

Johansson and Takahashi are analogous art because they are from a similar field of endeavor in speech coding systems utilizing spectral smoothing. Thus, it would have been obvious to one of ordinary skill in the art, at the time of invention, to modify the teachings of Johansson with the time frame counting means taught by Takahashi in order to provide a means for more accurately determining voice status *(Takahashi, Col. 13, Lines 47-53)* capable of achieving more natural reproduced non-voice data *(Takahashi, Col. 2, Lines 65-67)*.

With respect to **Claims 3, 36, and 59**, Takahashi further recites utilizing a previously received LP feature in smoothing a non-voice signal portion *(Col. 9, Lines 4-38)*.

With respect to **Claims 7, 40, and 63**, Johansson further discloses:

A voice-less part decoding unit that changes a value of a coefficient used to smooth at least one of the feature parameters according to the feature parameters, and decodes the speech

signal in the voice-less period by smoothing at least one of the feature parameters with the changed value of the coefficient *(decoder apparatus that determines a mixing factor, which varies according to signal features, to smooth spectral contour parameters for background noise silence periods, Col. 6, Lines 21-38; and Col. 3, Line 33- Col. 4, Line 65).*

Claims 8-9, 41-42, and 64-65 contain subject matter similar to claims 2 and 4, and thus, are rejected for the same reasons.

Claims 10, 43, and 66 contain subject matter similar to Claims 2-5, and thus, are rejected for the same reasons.

With respect to **Claims 23 and 52**, Johansson further teaches energy parameters indicative of a spectral contour (envelope) *(Col. 3, Line 33- Col. 4, Line 65).*

With respect to **Claims 28-30 and 32-33** Johansson discloses decoder implementation in a transceiver having a speech coder *(Col. 6, Lines 55-67)* while Takahashi recites a speech coder having a voice status detector *(Col. 7, Lines 3-21).*

5. **Claims 6, 12-13, 15-16, 18-19, 25, 31, 39, 45-46, 48, 54, 62, 68-69, and 71** are rejected under 35 U.S.C. 103(a) as being unpatentable over Johansson in view of Jarvinen et al *(U.S. Patent: 5,960,389).*

With respect to **Claims 6, 12, 39, 62, and 68**, Johansson discloses the spectral contour smoothing decoder for background noise, wherein a mixing (smoothing) factor is changed based on whether speech or noise data is identified, as applied to Claim 5. Johansson further discloses decoding method implementation using a digital signal processor (DSP) program, wherein the DSP would inherently require a memory medium for storing such a program *(Col. 7, Lines 1-5).*

Johansson does not specifically suggest the use of information indicative of whether speech feature parameters are transmitted or not to determine whether a received signal is speech or background noise for a smoothing determination, however Jarvinen recites an SP flag that is utilized for such a purpose *(Col. 15, Lines 19-46)*.

Johansson and Jarvinen are analogous art because they are from a similar field of endeavor in speech coding systems utilizing spectral smoothing. Thus, it would have been obvious to one of ordinary skill in the art, at the time of invention, to modify the teachings of Johansson with the SP flag taught by Jarvinen in order to provide a means of conveniently indicating the presence of speech or silence (background noise) for implementation of appropriate voice/silence transition smoothing *(Jarvinen, Col. 13, Lines 33-42; and Col. 15, Lines 37-46)*.

With respect to **Claims 13, 15, 45-46, 48, 69, and 71**, Jarvinen further recites:

The voiceless part decoding unit receives information representing whether the feature parameters are sent at a sending location *(SP flag received at a speech decoder, Col. 15, Lines 19-46)*.

With respect to **Claims 16 and 18-19**, Jarvinen further discloses:

When a length of a voice period immediately before a first voice-less period is shorter than a predetermined length, a value of a feature parameter which is finally transmitted in a second voice-less period immediately before the voice period is used as an initial value of smoothing *(utilizing a previous noise parameter for smoothing upon the occurrence of a short speech burst, Col. 21, Lines 16-35; Col. 15, Lines 19-46; and Col. 2, Lines 28-43)*.

With respect to **Claims 25 and 54**, Johansson further teaches energy parameters indicative of a spectral contour (envelope) *(Col. 3, Line 33- Col. 4, Line 65)*.

With respect to **Claims 31** Johansson discloses decoder implementation in a transceiver having a speech coder *(Col. 6, Lines 55-67)* while Jarvinen recites a speech coder having a voice activity detector *(Col. 13, Lines 21-42)*.

6. **Claims 11, 14, 17, 44, 47, 67, and 70** are rejected under 35 U.S.C. 103(a) as being unpatentable over Johansson in view Takahashi, and further in view of Jarvinen et al.

With respect to **Claims 11, 44, and 67**, Johansson in view of Takahashi discloses the spectral contour smoothing decoder for background noise utilizing a means for counting a number of time frames from a transition or hangover between voice and non-voice data, as applied to Claim 2. Johansson in view of Takahashi do not specifically suggest the use of information indicative of whether speech feature parameters are transmitted or not to determine whether a received signal is speech or background noise for a smoothing determination, however Jarvinen recites an SP flag that is utilized for such a purpose *(Col. 15, Lines 19-46)*.

Johansson, Takahashi, and Jarvinen are analogous art because they are from a similar field of endeavor in speech coding systems utilizing spectral smoothing. Thus, it would have been obvious to one of ordinary skill in the art, at the time of invention, to modify the teachings of Johansson with the SP flag taught by Jarvinen in order to provide a means of conveniently indicating the presence of speech or silence (background noise) for implementation of appropriate voice/silence transition smoothing *(Jarvinen, Col. 13, Lines 33-42; and Col. 15, Lines 37-46)*.

With respect to **Claim 14, 47, and 70**, Jarvinen further recites:

The voiceless part decoding unit receives information representing whether the feature parameters are sent at a sending location *(SP flag received at a speech decoder, Col. 15, Lines 19-46)*.

With respect to **Claim 17**, Jarvinen further discloses:

When a length of a voice period immediately before a first voice-less period is shorter than a predetermined length, a value of a feature parameter which is finally transmitted in a second voice-less period immediately before the voice period is used as an initial value of smoothing *(utilizing a previous noise parameter for smoothing upon the occurrence of a short speech burst, Col. 21, Lines 16-35; Col. 15, Lines 19-46; and Col. 2, Lines 28-43)*.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Hayata (U.S. Patent: 5,787,388)- teaches the use of a frame-count dependent smoothing coefficient in speech decoding.

Kapanen *(U.S. Patent: 5,835,89)*- teaches a discontinuous transmission system utilizing silence and voice frame averaging.

Yue et al (U.S. Patent: 6,026,356)- teaches a weighted averaging operation that is applied to background noise filter coefficients.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James S. Wozniak whose telephone number is (571) 272-7632. The examiner can normally be reached on M-Th, 7:30-5:00, F, 7:30-4, Off Alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached at (571) 272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

James S. Wozniak
5/10/2006

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